USSR

UDC 621.224

KVYATKOVSKIY, V. S., SOKOLOV, A. P., and BELASH, I. G.

"New Research on Diagonal Hydroturbines Series D60 (thrusts 36 + 60 m)"

Tr. Mosk. Energ. In-ta (Works of the Moscow Power Engineering Institute), No 132, 1972, pp 5-14 (from Referativnyy Zhurnal -- Turbostroyeniye, No 2, 1972, Abstract No 2.49.170)

Translation: On the basis of an analysis of previous developments of hydraulic-turbine impellers, two high-speed impellers have been designed: one with $Z_1 = 7$, $dv_t = 0.5\ D_1$, n = 110 rpm, Q = 1100 l/sec (turbine D60 - 4015) and the other with $Z_1 = 9$, $d_{tv} = 0.55\ D_1$, n = 105 rpm, Q = 1000 l/sec (turbine D60 - 4016). Consideration is given to variants of the application of the designs of series D60 for specific hydroelectric power plants. 6 figures. 4 references.

1/1

1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--X RAY SPECTRA, ENERGY BAND STRUCTURE, AND SUPERCONDUCTIVITY OF V SUB3 X TYPE COMPOUNDS -U-

AUTHOR-(03)-NEMNONOV, S.A., KURMAEV, E.Z., BELASH, V.P.

B

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 39, NR 1, PP 39-47

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--X RAY SPECTRUM, ENERGY BAND STRUCTURE, ELECTRON STRUCTURE, SUPERCONDUCTIVITY, VANADIUM COMPOUND, SILICIDE, CHROMIUM SILICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0082 STEP NO--GE/0030/70/039/001/0039/0047

CIRC ACCESSION NO--AP0111276

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0111276

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. X RAY K EMISSION BANDS OF THE METAL ATOMS FROM ME SUB3 X,COMPOUNDS (V SUB3 GA, V SUB3 SI, V SUB3 GE, CR SUB3 SI) ARE INVESTIGATED. A MULTIPLE BAND STRUCTURE OF THE ENERGY SPECTRUM IS FOUND CHARACTERIZED BY A NUMBER OF OVERLAPPING BANDS RELATED TO NONMETALLIC S, P, AND METALLIC DP,STATES. THE RESULTS OF THEORETICAL CALCULATIONS FOR V SUB3 GA, V SUB3 SI, AND V SUB3 GE (MATTHEISS (9)) ARE FOUND TO CORRELATE WELL WITH EXPERIMENTAL DATA. SOME DEVIATIONS, ESPECIALLY IN THE LOWER PART OF VALENCE BAND ARE ATTRIBUTED TO THE CHOICE OF THE CRYSTAL POTENTIAL. ON THE BASIS OF EXPERIMENTAL RESULTS IT SEEMS POSSIBLE TO SUGGEST THEORETICAL CALCULATIONS USING A CRYSTAL POTENTIAL CORRESPONDING TO THE 3D PRIME3 4S PRIME2 VANADIUM ATOM CONFIGURATION. THE RELATIONSHIP BETWEEN THE ELECTRONIC STRUCTURE OF ME SUB3 X,COMPOUNDS AND THE CHANGE OF THEIR SUPERCONDUCTING PROPERTIES IS DISCUSSED. FACILITY: INSTITUTE OF THE PHYSICS OF METALS, ACADEMY OF SCIENCES OF THE USSR, SVERDLOVSK.

UNCLASSIFIED

USSR

UDC: 669.1:541/1

ZHUKHOVITSKIY, A. A., BELASHCHENKO, D. K., BOKSHTEYN, B. S., GRIGORYAN, V. A., GRIGOR'YEV, G. A., and GUGLYA, V. G.,

Fiziko-Khimicheskiye Osnovy Metallurgicheskikh Protsessov (Physico-Chemical Bases of Metallurgical Processes), Moscow, Metallurgiya, 1973, 392 pp

Translation: Annotation. This book contains the material of special courses used by the students of the Physics-Chemistry Department of the Moscow Institute of Steel and Alloys. This work makes it possible for a broad range of young specialists to acquaint themselves with many branches of modern physics and physical chemistry. The book contains: 104 illustrations, 17 tables, and 292 bibliographic entries.

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ZHUKOVITSKIY, A. A., Physico-Chemical Bases of Metallurgical Processes, Moscow, 1973

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ZHUKOVITSKIY, A. A., Physico-Chemical Bases of Metallurgical Processes, Moscow, 1973

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ZHUKOVITSKIY, A. A., Physico-Chemical Bases of Metallurgical Processes, Moscow, 1973

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USSR

ZHUKOVITSKIY, A. A., Physico-Chemical Bases of Metallurgical Processes, Moscow, 1973

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ZHUKOVITSKIY, A. A., Physico-Chemical Bases of Metallurgical Processes, Moscow, 1973

1/2 017 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ELECTROTRANSPORT OF SILVER IN MOLTEN ZINC -U-

AUTHOR-(03)-VANYUKOV, A.V., BELASHCHENKO, D.K., SAMEDINOV, U.K.

COUNTRY OF INFO--USSR

B

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 182-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LIQUID METAL, ZINC, SILVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0696 STEP NO--UR/0126/70/029/001/0182/0184

CIRC ACCESSION NO--AP0105672

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105672

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. AND CONCN. DEPENDENCES OF THE EFFECTIVE CHARGE OF AG IN A MOLTEN SOLN. OF AG IN ZN WERE STUDIED. THE TESTS WERE CARRIED OUT AT 520, 560, AND 620DEGREES. THE CONTENT OF AG IN THE SPECIMEN WAS 0.003-3.5 AT. PERCENT. THE C.D. WAS 150-180 A.-CM PRIME2. IN THE SOLN. STUDIED, THE EFFECTIVE CHARGE OF AG IN ZN DOES NOT DEPEND EITHER ON THE COMPN. OR THE TEMP. AND IS (1.1 PLUS OR MINUS 0.3)E.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ELECTROTRANSFER IN A BISMUTH AND LEAD SYSTEM -U-

AUTHOR-(02)-ARMYANOV, S.A., BELASHCHENKO, D.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 229-30

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--BISMUTH ALLOY, LEAD ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0164 STEP NO--UR/0370/70/000/001/0229/0230

CIRC ACCESSION NO--AP0054960

UNCLASSIFIED

2/2 008 UNCLASSIFIED

CIRC ACCESSION NO--AP0054960 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTROTRANSFER IN THE BI, PB ALLOYS HAS BEEN INVESTIGATED AT 500DEGREES BY THE METHOD OF STATIONARY DISTRIBUTION OF THE COMPONENTS IN A VERTICAL CAPILLARY. THE RESULTS OBEY THE EQUATION Z SUBBI EQUALS MINUS 1.5 N SUBPB (4 PLUS 0.78 N SUBPB) (Z SUBBI EQUALS EFFECTIVE CHARGE OF BI IN THE ALLOY, N SUBPB EQUALS AT. PERCENT PB). THE RATIO OF THE COMPONENTS DISPERSION CROSS SECTION VARIES IN THE RANGE 0.64-0.68.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--INFLUENCE OF METHODS OF MEASURING ON THE RESULTS OF ELECTROTRANSPORT -U-

AUTHOR-(02)-BELASHCHENKO, D.K., GUSHCHINA, YE.I.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2) 464-7

DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT, CHEMISTRY

TOPIC TAGS--MEASUREMENT, BISMUTH, CADMIUM, LEAD, MATERIAL MIXING, ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0278 STEP NO--UR/0076/70/044/002/0464/0467

CIRC ACCESSION NO--AP0113208

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0113208

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGE IN THE EFFECTIVE CHARGE Z, DURING MIGRATION IN MIXT. OF BI (SIMILAR TO 1 AT. PERCENT) IN LIQ. CD AT 360DEGREES AND OF PB (SIMILAR TO 0.02 AT. PERCENT) IN CD AT 370DEGREES, WAS DETD. BY AN EQUIL. DIFFUSION METHOD USING HORIZONTAL AND VERTICAL GLASS CAPILLARY TUBES. IN ALL INSTANCES, THE VALUE OF Z WAS NOTICEABLY HIGHER WHEN DETD. IN THE HORIZONTAL CAPILLARY. FOR DIL. SOLNS. OF BI IN CD, Z SUBBI EQUAL 13.1 PLUS OR MINUS 1.1 AND FOR PB IN CD, Z SUBPB EQUAL 5.95 PLUS OR MINUS 0.35. FACILITY: INST. STALI SPLAVOY, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 539.3

BELASHEVSKIY, G. Ye.

"Stress Distribution in a Cylindrical Shell With an Opening With a Rigid Inclusion of Noncircular Shape"

V sb. Raschet. prostranstv. sistem stroit. mekh. (Calculation of Three-Dimensional Systems in Structural Mechanics -- Collection of Works), Saratov, Saratov University, 1972, pp 98-99 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V143)

Translation: The stress state of a cylindrical shell with an opening or inclusion of noncircular shape is determined. The solution is based on the imposition of an additional stress state of a hollow shell with an opening on the basic stress state of a shell without an opening. The additional stress state is determined by the method of perturbation of the shape of the boundaries. N. P. Kulakov.

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USSR

UDC 629.78.015.4

BELASHEVSKIY, G. Ye.

"Concentration of Stresses in Circular Cylindrical Envelope with Curved Aperture"

Tr. Kuybyshev. Aviats. In-t. [Works of Kuybyshev Aviation Institute], No 48, 1971, pp 41-50, (Translated from Referativnyy Zhurnal, Raketostroyeniye, NO 2, 1972, Abstract No 2.41.175 from the Resume).

Translation: A method is presented for determining stresses in a cylindrical envelope weakened by a noncircular aperture of moderate size with loading symmetrical relative to the rectangular coordinate axes. The case of an absolutely rigid washer soldered into the aperture is also studied. The problem is reduced to solution of infinite systems of algebraic equations (in the zero and first approximations) by means of the method of boundary form perturbation. 4 Figures; 8 Biblio. Refs.

1/1

1/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THEORY OF THE TOTAL EXPERIMENT FOR LEPTONIC DECAYS OF HYPERONS -U-

AUTHOR-(02)-BELAVIN, A.A., SOLOVYEV, V.V.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(2), 437-42

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--LEPTON, RADIOACTIVE DECAY, HYPERON, GEOMETRY, TRANSITION PROBABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/1036 STEP NO--UR/0367/70/011/002/0437/0442

CIRC ACCESSION NO--AP0110726

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110726

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPRESSION FOR THE DIFFERENTIAL PROBABILITY OF LEPTONIC DECAY OF POLARIZED HYPERONS IS DERIVED AND COMPARED WITH EXPTL. RESULTS, BY TAKING INTO ACCOUNT ALL THE COMPLEX FORM FACTORS. THIS EXPRESSION CAN BE USED TO DET. EXPTL. THE VALUES OF THE FORM FACTORS AT FIXED MOMENTUM TRANSFER. FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

BELAVIN, O.V.

RADAR

GLARIA

SO: JPRS 56143
01 JUNE 1972

Radar

UDC 429.7.058.43.001

DETERMINATION OF THE RANGE TO A TARGET BY PASSIVE RADAR

O. V. Belavin, Candidate of Technical Sciences

Pages 219-223

The passive radar (padar) investigated in reference [1] determines the target location by signals emitted by it. The target can be an aircraft having an onboard circular scanning radar, a range finder interrogator with a non-directional antenna, and so on. In this article versions of using passive radar to determine the range to a target are analyzed inasmuch as determination of the relative angular coordinates of the target present no technical difficulties.

Angle Gauge Designs

The geometric picture of radio signal propagation from the target 2 to a passive radar 1 is presented in Figure 1. Determination of the target location is possible if we detect two signals -- the direct signal and the echo from the ground. By measuring the altitude (H_1) of the passive radar receiver and solving the triangle Δ 123, it is possible to find the range to the target.

By using the sine theorum for the triangle Δ 123, we obtain

$$\frac{r_1}{\sin\beta_1} = \frac{r}{\sin\beta_4} \quad (1)$$

As is easy to see, the angle

$$\beta_3 = 180 - (\beta_2 - \beta_1) - \beta_4 \quad (2)$$

The angle β_4 is found from the simple relation through the angle of site with respect to the radio signal reflected from the target

$$\beta_4 = 180° - 2\beta_2 \quad (3)$$

USSR

UDC 621.396.962.018.2

BELAVIN, O. V.

"Passive Radar Determination of Target Range"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1971, vyp. 207, pp 216-223 (from RZh-Radiotekhnika, No 12, Dec 71, Abstract No 12G46)

Translation: The paper deals with ways to use a passive radar for determining the range to a target radiating a radio signal. Requirements for accuracy in measurement of geometric parameters are formulated. One illustration, bibliography of two titles. Resumé.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE-- 090CT70

TITLE--THE PRODUCTION OF ALL WELDED SCREEN PANELS (FROM THE EXPERIENCE OF THE BELGOROD BOILER PLANT -U-

AUTHOR-(03)-BANSHCHIK, V.G., BELAVIN, V.A., KLEPACH, A.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 69-70

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STEAM BOILER, COAL, WELDING, INDUSTRIAL PLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0893 STEP NO--UR/0122/70/000/002/0069/0070

CIRC ACCESSION NO--AP0113734

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0113734

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT THE BELGOROD BOILER PLANT, A SERIES OF STANDARDIZED COAL DUST BOILER UNITS, DESIGNED FOR OPERATION WITH SUPERCHARCHING AT A PRESSURE OF 300 MM OF WATER COLUMN, HAS BEEN DESIGNED. USED IN SUCH A BOILER UNIT IS A STRUCTURE FOR PROTECTING THE HEATING SURFACES IN THE COMBUSTION CHAMBER, WHICH CONSISTS OF ALL WELDED GAS IMPERMEABLE SCREENING WALLS FORMED BY A WELDED MEMBRANE PANEL MADE UP ON STANDARD ELEMENTS. THE CONSIDERATIONS INVOLVED IN DESIGNING AND PRODUCING THIS UNIT ARE SET FORTH IN THE ARITCLE. AT PRESENT THE STATE SPECIAL DESIGN OFFICE "ENERGOMASH" IS DESIGNING A MECHANIZED FLOW LINE FOR THE PRODUCTION OF GAS IMPERMEABLE SCREEN PANELS FOR THE BELGOROD BOILER PLANT.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF SOME DRUGS ON ANIMAL TOLERANCE TO EXTREME STRESS -U-

AUTHOR--BELAY, V.YE., VASILYEV, P.V., GLOD, G.D.

B

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKAYA BIOLOGIYA I MEDITSINA, RUSSIAN, VOL 4, NO 1, JANUARY FEBRUARY 1970, PP 77-79
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPOXIA, ACCELERATION STRESS, ALTITUDE CHAMBER, SPACE MEDICINE, NERVOUS SYSTEM DRUG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0753 STEP NO--UR/0453/70/004/001/0077/0079

CIRC ACCESSION NO--AP0102718

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102718

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WE MADE A COMPARATIVE STUDY OF THE EFFECT OF SOME NEUROTROPHIC DRUGS WHICH HAVE DIFFERENT EFFECTS ON ANIMAL TOLERANCE TO ACUTE HYPOXIC HYPOXIA, PROLONGED TRANSVERSE ACCELERATIONS AND MAXIMUM PHYSICAL LOADS. THE EXPERIMENTS WERE MADE ON 1,694 ALBINO MICE AND 116 WHITE RATS. THE ACCELERATIONS WERE ON A CENTRIFUGE WITH A ROTATION RADIUS OF 4.25 M AND HYPOXIA WAS PRODUCED IN A PRESSURE CHAMBER WITH ASCENT TO AN "ALTITUDE" OF 10.5-11 KM. AS THE MODEL OF MAXIMUM PHYSICAL LOAD WE USED THE METHOD OF FORCED SWIMMING OF ANIMALS (AS DESCRIBED BY I. I. BREKHMAN) WITH AN ADDITIONAL WEIGHT (10 PERCENT OF THE BODY WEIGHT) UNTIL THEY DROWNED. WE DETERMINED THE DEATH RATE FROM ACCELERATIONS OF 42 G LASTING VARIOUS TIMES, LIFETIME "ALOFT" AND THE LENGTH OF TIME WHICH THE ANIMALS SWAM. THESE DATA WERE STATISTICALLY ANALYZED.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF SOME PHARMACOLOGICAL SUBSTANCES ON THE STABILITY OF ANIMALS UNDER CERTAIN EXTREMAL LOADS -U-
AUTHOR-(03)-GLOD, G.D., BELAY, V.YE., VASILYEV, P.V.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P. 77-79
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOLOGIC ACCELERATION EFFECT, DRUG TREATMENT, HYPOXIA, SPACE MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1973 STEP NO--UR/0453/70/004/000/0077/0079

CIRC ACCESSION NO--AP0120616
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120616

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE EFFECTS OF PHENAMINE, SIDNOCARB, STRYCHNINE, SECURININE, ARALESIDE, TRIOXAZINE, BANACTISINE AND CHLORDIAZEPOXIDE INJECTIONS ON THE RESISTANCE OF 1684 WHITE MICE AND 116 WHITE RATS TO G ACCELERATIONS AND TO ACUTE HYPOXIA AT ATMOSPHERIC PRESSURES CORRESPONDING TO ALTITUDES OF 10.5-11 KM. THE FLOATING CAPABILITY OF EXPERIMENTAL ANIMALS WITH ATTACHED WEIGHTS WAS USED AS A CRITERION OF THEIR PHYSICAL CONDITION IN SOME OF THE EXPERIMENTS. THE DIVERSE EFFECTS OF THESE INJECTIONS ON THE RESISTANCE OF MICE AND RATS TO DIFFERENT STRESSES ARE INDICATED. THUS, THE ACCELERATION AND HYPOXIA RESISTANCE OF EXPERIMENTAL ANIMALS WERE INCREASED SUBSTANTIALLY BUT THEIR PHYSICAL CONDITION WAS WEAKENED AFTER CHLORDIAZEPOXIDE INJECTIONS.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--EFFECT OF ZINC CONCENTRATION ON ITS DISTRIBUTION COEFFICIENT IN INDIUM ANTIMONIDE -U-

AUTHOR-(02)-BELAYA, A.D., ZEMSKOV, V.S.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2) 2377-8

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ZINC, ISOTOPE, CRYSTALLIZATION, INDIUM ANTIMONIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0549 STEP NO--UR/0363/70/006/002/0377/0378

CIRC ACCESSION NO--AP0105534

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONSIDERABLE DECREASE OBSD. IN THE DISTRIBUTION COEFF. OF ZN BETWEEN THE LIQ. AND THE SOLID PHASES CAN BE EXPLAINED BY THE FACT THAT CRYSTN. OF THE SOLID PHASE UNDER DRAWING TAKES PLACE UNDER NONEQUIL. CONDITIONS. IN THE PRESENT WORK, THE RATE OF DRAWING OF CRYSTALS OF SOLID SOLNS. OF ZN IN IN ANTIMONIDE WAS 0.038 MM- MIN. WHILE THE RATE OF ROTATION WAS 120 RPM. THE CRYSTALS WERE GROWN IN THE BETA (111) DIRECTION. THE ZN WAS INTRODUCED AS THE RADIOACTIVE ISOTOPE PRIME6 5ZN. THE INTERACTION BETWEEN THE COMPONENTS, APPARENTLY, EXERTS A SIGNIFICANTLY LARGER EFFECT ON THE DISTRIBUTION COEFF. OF ZN THAN HAS BEEN HERTOFORE SUPPOSED. THE TENDENCY OF ZN AND SB TO FORM BINARY COMPDS. CANNOT HELP BUT AFFECT THE DISTRIBUTION COEFF. PRESUMABLY, THE COMPLEX CHANGE OF THE DISTRIBUTION SHOULD BE REFLECTED IN THE CORRESPONDING NATURE OF THE LIQUIDUS AND SOLIDUS.

UNCLASSIFIED

Hydrobiology

B

USSR UDC 581.132.1:581.526.325(268.42)

BELAYA, T. I., and FEDOROV, V. D., Chair of Hydrobiology

"Study of the Relationship of Elements Used by Growing Phytoplankton in the White Sea"

Moscow Vestnik Moskovskogo Universiteta, No 1, Jan/Feb 70, pp 63-75

Abstract: The ratio of elements used by growing phtoplankton was controlled for one full vegetative season at two levels of illumination, using natural medium and a medium enriched with $NaNO_3$, NaH_2PO_3 and $FeSO_4$. The containers were exposed in situ for four days - enough time for even the slowest multiplying forms to complete one cell division. Only samples which showed at least doubled biomass were used in calculation of the consumption of elements. It was determined that the consumption of all elements per unit of biomass formed was higher with increased content in the surrounding medium. The effect of light was not uniform: nitrogen consumption did not change with doubling of the illumination time, but phosphorus and iron consumption did change, phosphorus consumption in cases of low concentration in the medium, and iron consumption with

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USSR

BELAYA, T. I., et al., Moscow, Vestnik Moskovskogo Universiteta, No 1, Jan/Feb 70, pp 63-75

increased illumination. Seasonal variations show an inverse relationship to mass changes of phytoplankton, but the relationship between the elements studied hardly changes throughout the season, and is 1000:50:4:9 for atomic ratios of C:N:P:Fe.

2/2

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--UTILIZATION OF BIOGENIC ELEMENTS BY A PHYTOPLANCTON COMMUNITY DEPENDING ON THEIR CONCENTRATION IN THE AQUATIC ENVIRONMENT AND

AUTHOR-(03)-FEDOROV, V.D., BELAYA, T.I., MAKSIMOV, V.N.

B

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3, PP 398-414

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHYTOPLANKTON, METABOLISM, BIOECOLOGY, PHOSPHORUS, IRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1379 STEP NO--UR/0216/70/000/003/0398/0414

CIRC ACCESSION NO--AP0126922

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126922

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEASONAL CHANGES OF THE CHARACTER OF CORRELATION BETWEEN THE PRODUCTION OF PHYTOPLANCTON AND UTILIZATION OF BIOGENIC ELEMENTS UNDER VARYING ILLUMINATION CONDITIONS WERE STUDIED WITH THE APPLICATION OF THE METHOD OF PLANNED ADDITION. THE ANALYSIS OF THE OBTAINED REGRESSIONS SHOWED THAT UTILIZATION OF BIOGENIC ELEMENTS BY A BIOMASS UNIT OF A PHYTOPLANCTON COMMUNITY INCREASED DEPENDING ON THE INCREMENT OF THE CONCENTRATION OF THESE ELEMENTS IN THE SURROUNDING MEDIA. AN INCREASE OF PHOSPHORUS CONCENTRATION CAUSES A DECREASE OF NITROGEN CONSUMPTION, WHEREAS NO REVERSE ACTION IS OBSERVED. AN INCREASE OF A CONCENTRATION OF PHOSPHORUS AND IRON CAUSE A RESPECTIVE RECIPROCAL CONSUMPTION OF EACH ELEMENT. A DOUBLE ILLUMINATION INCREASE LEADS TO A DECREASED CONSUMPTION OF ALL THE THREE ELEMENTS. THE LATTER EFFECT REGARDING NITROGEN AND PHOSPHORUS CONSUMPTION BECOMES STRONGER WHEN THE CONCENTRATIONS OF PHOSPHORUS AND IRON ARE INCREASED RESPECTIVELY. FACILITY: M. V. LOMONOSOV STATE UNIVERSITY, MOSCOW.

USSR B UDC: 581.1

FEDOROV, V.D., BELAYA, T.I., MAKSIMOV, V.N., State University im. M.V. Lomonosov

"Utilization of Biogenic Elements by Phytoplankton Community Depending on Their Concentration in W ter and Illumination Conditions."

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 3, May/Jun 70, pp 398-414

Abstract: Seasonal changes suggesting a correlation between the production of phytoplankton and the utilization of biogenic elements under varying illumination conditions were studied using the method of planned additions. Analysis of the obtained regression equations showed that utilization of biogenic elements by biomass units of a phytoplankton community increases with increase in the concentration of these elements in the medium. An increase in phosphorus concentration causes a decrease in nitrogen consumption, while the reverse does not occur. Increases in the concentration of phosphorus and iron cause a mutual increase in consumption of both element. Two-fold increase in illumination leads to decreased consumption of all three elements. This effect is intensified with respect to nitrogen and phosphorus consumption when the concentrations of phosphorus and iron are increased respectively.

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Acc. Nr: AP0041537 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code: UR0366

B

90006v New method for preparing acyl isocyanates. Samarai, L. I.; Belaya, V. P.; Galenko, G. F.; Derkach, G. I. (Inst. Org. Khim., Kiev, USSR). *Zh. Org. Khim.* 1970, 6(1), 85–8 (Russ). The reaction of RC(:NH)OEt or RC(:NH.HCl)-OEt (I) with $(COCl)_2$ gave RC(OEt):NCOCOCl (II) (R is CCl_3, CH_2ClCCl_2, Ph, *p*-ClC_6H_4, *p*-$O_2NC_6H_4$, or 3-piperidyl). The reaction of PhC(:NCl)OEt with $(COCl)_2$ also gave II (R = Ph). Heating II at 110–30° gave RCONCO; II react with moisture in the air giving I, with R^1OH giving RC(OEt):$NCOCO_2R^1$, or with R^1NH_2 giving RC(OEt):$NCOCONHR^1$. CPJR

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REEL/FRAME 19751405

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USSR UDC 576.851.49.097.21:576.851.49.097.2

KOSTENKO, L. S., and BELAYA, Yu. A., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"The Surface K Antigen of Sh. boydii and Its Role in Virulence"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 65-71

Abstract: Cells of Sh. boydii were found to contain nine soluble antigens (including the surface K antigen and the O somatic antigen). Heating studies showed the cells did not lose the K antigen after heating for 1 hr at 60°C, but the amount of the antigen was significantly decreased by heating for 2 to 2.5 h at 100°C. The K antigen was completely lost by heating the cells for 2 h at 120°C. HCl treatment of the cells resulted in the almost complete disappearance of the K antigen, while alcohol treatment was without effect. Further differentiation of the K antigen from the O antigen was achieved with serological and immunoelectrophoretic studies. Subjecting colonies of Sh. boydii to oblique light made it possible to differentiate mutants either lacking the K or O antigen or containing them in a modified form (these colonies appeared dull blue, "normal" colonies possessing K and O antigens were concentric and appeared red-orange). Virulence studies on

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KOSTENKO, L. S., and BELAYA, Yu. A., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 65-71

guinea pigs showed that cells with the K and O antigens elicited keratoconjuctivitis, while cells without the K and/or the O antigens failed to do so. This would indicate that the K antigen of Sh. boydii contributes to its virulence.

Acc. Nr: AP0043934 Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 22-27

CONCERNING THE SPECIFIC PROPHYLAXIS OF DYSENTERY. REPORT VI. THE EFFICACY OF ENTERAL IMMUNIZATION WITH LIVE DYSENTERY VACCINE IN EXPERIMENTS ON MONKEYS

Yu. A. Belaya, K. N. Kavtaradze, V. D. Gekker, E. K. Dzhikidze

Immunogenic properties of live lyophilized dysentery vaccine prepared of attenuated strain Flexner 2a were studied on 45 monkeys macaca rhesus. Of this number 25 monkeys were immunized enterally, 5 times, at intervals of 3 to 4 days with live vaccine in doses of 15—50 milliard live microbial cells. Two weeks after the immunization they were infected with 75 milliard live microbial cells of a virulent strain Flexner 2a. The incidence of the disease in the experimental group was 7.6 less than among the nonimmunized 18 monkeys. A rise of agglutinins (3—11-fold) was noted in the process of immunization; preventive properties of the sera in testing on chick embryos showed no significant changes. Bacteria of vaccine strain were isolated for 1 to 4 days from the monkeys after immunization. There occurred no restoration of the virulence.

Thus, live Flexner dysentery vaccine was shown to be areactogenic, harmless and to possess immunological efficacy in experiments on monkeys.

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REEL/FRAME
19770360

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UDC 612.822.3.05

USOV, V. V., PROTASOV, V. A., BELAYEV, V. V., ANNARAUD, D. K., and CHEREPANOV, I. M., Laboratory for Computer Methods, Department of Applied Neurophysiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"A Helical Electrode for Electrophysiological Studies of the Deep Structures of the Brain"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 59, No 11, Nov 73, pp 1764-1765

Abstract: Since helical electrodes have been successfully employed for long-term stimulation of smooth musculature, a similar electrode has been constructed for recording the biopotentials of the deep structures in the brain. The coiled electrode contains within it a guiding rod and the entire assembly is located within a hypodermic needle-like device for introducing the electrode. Once it is located in the desired region and the inner rod removed, the helical nature of the polyfluoroethylene-insulated electrode possesses sufficient elasticity to permit the outer tissues to heal around it and thus fix it. No additional outer fixation of the electrode is necessary.

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Acc. Nr. AP0049774 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code 4R0280

105616v Electron spectra and structure of 1-indanone, tetralone, phthalide, and 1,3-indandione molecules. Belaits, I. F.; Nurmukhametov, R. N. (Nauch.-Issled. Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). *Zh. Fiz. Khim.* 1970, 44(1), 29-33 (Russ). Electron absorption (20°) and luminescence (−196°) spectra of 5×10^{-4}–5×10^{-1} *M* solns. of 1-indanone (I), 1-tetralone (II), phthalide, and 1,3-indandione (III) are presented. The character of the resp. bands and the energy of $\pi\pi^*$ and $n\pi^*$ transmissions were detd. Energy of triplet $\pi\pi^*$ level of I in cyclohexane, of II in *n*-alkanes, and of III, not appearing in optic transmissions are evaluated. The origin of long- and short-lived components of phosphorescence of I, and differences in phosphorescence lifetime of II in EtOH and *n*-alkanes was explained by relative positions of $n\pi^*$ and $\pi\pi^*$ levels changing when going from nonpolar to polar solvent. No fluorescence was found with the compds. studied except for 6-aminophthalide (strong lowering of S_1^* level, owing to $\pi\pi^*$ transmission with transfer of charge, and higher position of $n\pi^*$ level prevent nonradiation deactivation $S_{\pi\pi^*}$). J. Panchartek

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REEL/FRAME
19801692

USSR UDC 681.3.06:51

BEL'BITSKIY, I. V., KOSAREV, Yu. G.

"The Systems Approach to the Construction of Translators for Computer Systems"

Vychisl. Sistemy [Computer System -- Collection of Works], No 42, Novosibirsk, 1970, pp 12-21, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V781 by V. Mikheyev).

Translation: Approaches to the solution of the problem of creation of an effective system for automation of programming for high productivity computer systems (CS) are discussed. It is noted that such a system must satisfy two basic requirements: it must be high effective -- the operating program must be comparable in machine time to a similar program composed "manually" using the internal machine language of the system; it must consider the specifics of preparation of problems for computer systems -- the process of parallel programming should make it approximately as difficult as the process of programming for one machine. A method of solution of this problem by stages by decreasing the volume and complexity of work performed in preparation of the initial program from stage to stage is suggested. 10 Biblio. Refs.

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USSR UDC 681.3.06:51

BEL'BITSKIY, I. V.

"The Metalanguage of a Syntactically Controlled Translator"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 42, Novosibirsk, 1970, pp 22-33, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V767 by V. Mikheyev).

Translation: A metalanguage is discussed, oriented to use in a syntactically controlled translator. It is noted that the language described allows very compact representation of a grammar of existing algorithmic languages. For example, the grammar of ALGOL-60 is fixed by approximately 250 rules (machine words). A syntactical analysis program which performs recognition of the rules of an R-grammar during the process of operation of the syntactically controlled translator contains approximately 100 instructions and operates at a rate of several tens of instructions per symbol of the initial statement.

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UDC 681.327.64'18

BEL'CHENKO, A. A., VYAZEMSKIY, V. O., and SUKHODOL'SKIY, V. Yu.

"Some Problems in the Design of Digital Magnetic Tape Storage"

Izv. Leningr. Elektrotekhn. In-ta (News of Leningrad Electrical Engineering Institute), No 92, 1971, pp 41-43 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B272, by B. K.)

Translation: Problems connected with the design of tape drive mechanisms for memory units with a capacity of 10^5--10^6 bits are discussed for those mechanisms which allow recording at tape speeds on the order of several microns per second and which allow read-out at considerably greater speeds (2--3 millimeters per second). It is noted that a change in the speed of revolution of the drive motor during the transfer from recording to reproduction and stabilization of its number of revolutions may be ensured by one electronic control bloc. It is recommended that the tape be pulled through with the help of a friction drive with a double loop of the tape, resulting in a complete wrap around angle of more than 360°. In connection with the small consumption of tape, the receiving and feeding cassettes of the tape drive mechanism could be joined by a spring-loaded connection,

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BEL'CHENKO, A. A., et al., Izv. Leningr. Elektrotekhn. In-ta (News of Leningrad Electrical Engineering Institute), No 92, 1971, pp 41-43 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B272, by B. K.)

which would replace the winding assemblies. The authors' data on a tape drive mechanism which is being transferred to series production at the present time is cited. 2 titles in bibliography.

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USSR

UDC 619:616.981.42-079

BEL'CHENKO, V. B., and IVANOV, N. P., Karaganda Scientific Research Veterinary Station and Kazakh Scientific Research Veterinary Institute

"The Indirect Hemagglutination Reaction as a Method for Diagnosing Brucellosis of Calves"

Moscow, Veterinariya, No 1, Jan 73, pp 109-112

Abstract: In connection with the prophylactic immunization of calves against brucellosis with strain 19, it is essential to detect sick animals, because the latter may remain a source of infection in the herd. Good results in diagnosing brucellosis of calves were obtained by the method of indirect hemagglutination, which yielded a higher percentage of positive results than the agglutination reaction or the reaction of complement fixation. To prepare a stable and active erythrocyte antigen, erythrocytes treated with tannin were sensitized with brucellae of strain 19V that had been destroyed by the action of ultrasound. Use of nonsensitized ovine erythrocytes in the reaction of indirect hemagglutination resulted in side reactions due to the presence of normal hemagglutinins in the blood serum of the calves. Preliminary adsorption of the serum samples with a 50% suspension of erythrocytes that had been treated with formalin eliminated the side reactions.
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1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--TEMPERATURE DEPENDENCE OF A THERMOGALVANIC CURRENT -U-

AUTHOR-(03)-BELCHINSKAYA, L.I., KALUZHINA, S.A., SHATALOV, A.YA.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(2), 228-30

DATE PUBLISHED-------70

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2/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0109720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CURRENT (I) OF GALVANIC CELLS OF VERY DIFFERENT TYPE, AT UNCHANGED NATURE OF METAL AND ELECTROLYTE COMPN., DEPENDS ONLY ON THE TEMP. DIFFERENCE BETWEEN THE HOT AND COLD ELECTRODES, I.E.: I EQUALS CONST. TIMES DELTA T. THIS RELATION WAS CONFIRMED BY EXPTL. DATA REGARDING SOME THERMOGALVANIC COUPLES WITH THE FOLLOWING ELECTRODES: CU, OR CD OR FE, IN 0.1 N H SUB2 SO SUB4 PLUS 0.9 N NA SUB2 SO SUB4; CU IN 0.1 N H SUB2 SO SUB4 PLUS 0.9 N CUSO SUB4; PT IN 0.01 N K SUB3 FE(CN) SUB6 PLUS 0.09 N K SUB4 FE(CN) SUB6.

FACILITY: VORONEZH. GOS. UNIV., VORONEZH, USSR.

UNCLASSIFIED

USSR UDC 621.791.754'.264

TITOV, N. YA., BEL'CHUK, G. A., and MEL'NIK, N. V., Leningrad Ship-Building Institute

"Mechanized Welding of Metals With Consumable Electrodes Along a Narrow Spacing Gap in the Gaseous Protection"

Kiev, Avtomaticheskaya Svarka, No 2, 1973, pp 5-7

Abstract: The effect of the gaseous composition (CO_2 + Ar) on the saturation with hydrogen of the low-alloyed weld metal was studied. For this purpose Sv-10KhGSN2Mt welding wire was used. The minimal concentration of hydrogen in the weld metal was observed in the presence of 20-30% CO_2 in the gaseous protective mixture with argon. Application of the reverse polarity welding with a jet transfer of the electrode metal decreased the amount of hydrogen in the weld metal. When the amount of oxygen in the gaseous mixture increased to 10% the concentration of hydrogen in the weld metal also increased. However, a further increase in the concentration of oxygen did not increase the amount of hydrogen in the weld metal. It is recommended that 75% Ar and 25% CO_2 be used as the protective atmosphere during the mechanized welding of metals.

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USSR UDC 621.791.754.011

BEL'CHUK, G. A., TITOV, N. Ya., Leningrad Shipbuilding Institute

"Method of Selecting Modes of Mechanized Gas-Electric Welding with Fusible Electrode in a Narrow Gap"

Kiev, Avtomaticheskaya Svarka, No 12, 1972, pp 23-26.

Abstract: A calculation method is suggested for selecting the basic parameters of the mode of a mechanized gas-electric welding installation with a fusible electrode. The order of calculation of the basic parameters is as follows: 1) Depending on the thickness of the edges, the gap width is assigned. In order to prevent shorting of the arc to the walls of the gap, it must not be less than the critical width. 2) The welding mode parameters are selected according to formulas presented in this article. 3) Other formulas presented are used to calculate the chemical composition of the seam metal.

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Acc. Nr: AP0049944 Abstracting Service: CHEMICAL ABST. 5-72 Ref. Code: UR 0314

101317a **Liquid-holding properties of some substances dried from organic liquids and water.** Kaminskii, L. P.; Bel'dii, V. V.; Dushchenko, V. P.; Sazhin, B. S.; Panchenko, M. S. (USSR). *Khim. Neft. Mashinostr.* 1970, (1), 6-8 (Russ). The heat of vaporization of MeOH, Me_2CO, CCl_4, and H_2O from kaolin, loam, potato starch (I), polycarbonate, poly(vinyl chloride), and chlorendic anhydride was detd. from thermal anal. heating curves of isothermal drying and sorption and adsorption isotherms. All of the materials cited had considerable amts. of adsorbed liqs. The amts. of liqs. retained by the polymers were detd. The sp. heat of vaporization was inversely proportional to temp. Increased temp. had different effects on the polymers, depending on their phys. structure; for instance, in I there was a significant swelling which increased its surface area and the amt. of the liq. retained.
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REEL/FRAME
19801880

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UDC 621.396.67.001.5

BELDOVSKIY, V. A., VINOGRADOV, B. A., VAN'KIN, A. S., ZVEREV, S. B., BUTKEVICH, A. O., MURAV'YEV, Yu. K.

"A Method of Plotting the Radiation Patterns of Antennas"

USSR Author's Certificate No 284070, filed 10 Apr 69, published 4 Jan 71 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11B112 P)

Translation: The proposed method enables automatic recording of a radiation pattern in 10-20 s on a CRT with image persistence and photographing in case of necessity. The antenna to be studied is mounted on a rotating platform and used as a receiving antenna. The emf from the antenna is sent to the receiver with linear amplification of the range to be studied. The output voltage of the receiver is sent through a current collector to the input of a discrete conversion module which generates a sequence of pulses which are delayed with respect to the trigger pulse. This pulse train is then sent to the electrode of a CRT with circular scan. Scanning of the CRT is triggered by pulses with a prf which ensures the accuracy required in reproduction of the radiation pattern. When the scan

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BELDOVSKIY, V. A., et al., USSR Author's Certificate No 284070, filed 10 Apr 69, published 4 Jan 71 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11B112 P)

rotation is synchronized with antenna rotation by means of a primary pickup circuit and an amplifier for the signal from the drive tracking system, the radiation pattern is reproduced on the screen of the CRT with a high accuracy determined by the linearity of the image stages. A calibrated mark unit shapes marking pulses for every five degrees of rotation of the antenna, and for controllable intervals with respect to field strength. The method appreciably simplifies the process of taking the radiation patterns of antennas; it can be used in synthesizing an antenna, and also in determining the optimum arrangement of transmitting and reception units for zones with a minimum noise level. Two illustrations. A. K.

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IOSELIANI, K., Col Med Serv, Candidate of Medical Sciences, BELEDA, R., Col Med Serv

"The Self-Regulation of Sleep"

Moscow, Aviatsiya i Kosmonavtika, No 9, Sep 71, p 43

Translation: The piloting of contemporary aircraft demands of the flight crew a high degree of physical and nervous and psychological tension, and great resistance to the effect of unfavorable factors of professional activity. Obviously, the rational organization of the crew's work and rest is of primary importance. In the flight personnel's regimen of rest, an important role is played by sleep, during which the organism regenerates its forces most intensively.

Sleep constitutes a state of the organism when inhibition extends to the entire cerebral cortex and to the subcortical centers. A sleep of full value comes quickly, is profound, lasting, and uninterrupted.

Disturbances of sleep arise first of all on account of the disruption of the mobility and force of the processes of stimulation and inhibition. When these processes become less mobile, they can linger on for a long time

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in given areas of the brain even after the need is gone. The nervous process turns into a "stagnation focus" that hinders the organism in adapting to new conditions, in this instance, to the process of falling asleep.

The causes disturbing sleep can be extremely varied, but conditionally they can be divided into two groups: those that depend on man himself, his work, life, behavior, and the state of his organism and the ones determined by the conditions of the environment.

The main condition for normal sleep is a correct rhythm of life with a judicious combination of mental and physical loads, active and varied recreation, and engaging in sports. It is very important to go to bed and get up at strictly established times, inasmuch as the accustomed time of going to sleep, combined with certain conditions (darkness, quiet by itself is conducive to sleep. It is better to get up an hour earlier than to "drive away" sleep and go to bed later. One should not eat within 3 hours of sleeping and 0.5-1 hour before sleep one should terminate one's activities and if possible take a walk. Physical load (physical exercise) should be excluded before sleep.

The working conditions of the flight personnel are frequently accompanied by substantial disruptions of the regimen of daily activity -- nighttime and prolonged flights, and so on -- which may cause disturbances to sleep.

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Under similar circumstances, it is not recommended to take sleep-inducing medication to which the organism is not indifferent, but rather use the method of self-training for falling asleep (active self-regulation) which has become widespread in recent years. This method is based on the principle of training the nervous processes of stimulation and inhibition, which leads to an increased ability of man to regulate himself his own psychological state. This method is based on the effect of muscular activity on the activity of the internal organs and of the central nervous system, by a voluntary change in the degree of tension of given groups of skeletal muscles and also by changing the frequency and depth of respiration. In addition, premeditatedly and purposefully, use is made of words in the form of certain verbal designations and formulations with a voluntary change in the direction and concentration of attention. The effectiveness of words and their influence on involuntary processes are increased when the cerebral cortex is somewhat inhibited and the person is in an intermediate state. The word formulas which are used for the self-regulation of sleep are of sleep are divided into two groups: those that induce a process of neuromuscular relaxation and those that give rise to ideas that affect the emotional state.

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In all this, the most important factors normalizing sleep are turning away from disturbing ideas, and fixing the attention on a monotonously repeated monotonous text and a state of quietness and rest.

The posture must be convenient and one usual for going to sleep. The set of techniques must be applied regularly, as much as possible at the same time before going to sleep. In the beginning, possibly, the entire text will have to be recited (and even to be repeated), but in time, sleep will come already at the first words.

An approximate full text for the normalization of sleep is as follows:

1. I am lying quietly . I feel comfortable and at ease. I am calm. I am comfortable. Time is passing slowly. My eyes are closing. Silence Quiet. Rest. I fell completely at rest... completely at rest.

2. The muscles of my right arm are relaxed. The muscles of my left arm are relaxed. My shoulders are relaxed and lowered. Both hands are relaxed. I fell the weight of my hands. I fell a pleasant warmth in my hands and in my finger-tips. I feel completely at rest.. completely at rest.

3. The muscles of my right leg are relaxed. The muscles of my left leg are relaxed. The muscles of my feet are relaxed. My feet are immobile and heavy. I feel a pleasant warmth in my soles and in my toes. I feel

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completely at rest... completely at rest.

4. My entire body is relaxed. The muscles of my back are relaxed. The muscles of my belly are relaxed. I feel a heaviness in my entire body. I feel a pleasant warmth over my entire body. I feel completely at rest... completely at rest.

5. The muscles of my face are relaxed. My eyebrows are in their normal position. My forehead is smooth. My eyelids are lowered and gently closed. The corners of my mouth are slack. The muscles of my mouth are relaxed. My tongue is relaxed in my mouth. The muscles of my jaws are relaxed. I feel a coolness on the skin of my forehead. My entire face is at rest and relaxed.

6. I am breathing quietly and evenly. I am breathing slowly and quietly. My heart is beating evenly and rhythmically. It is completely calm. My heart beats quietly and evenly. My entire body is relaxed. I feel a pleasant warmth over my entire body. I feel completely at rest... completely at rest.

If the emotional stimulation is very strong and sleep is long in coming, the text is repeated until the moment of falling asleep. While this is going on, one should not think of sleep and try to summon it. Sleep comes

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unnoticeably, and is caused not by the desire to sleep, but by relaxation and drawing attention and thoughtaway from disturbing topics.

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BELEDA, R., Lt Col Med Serv

"Physiological Rhythms and the Resistance of the Organism"

Moscow, Aviatsiya i Kosmonavtika, No 1, Jan 71, p 45

Translation: Rhythmicity or regular recurrence of the same processes is one of the signs of life. In conformity with the rhythmical changes in natural phenomena (day, night), a definite daily rhythm of physiological functions (sleep, wakefulness) has developed in the human organism.

All vegetative functions of the organism (frequency of heart contractions and respiration, body temperature, activity of endocrine glands, and so on) are subject to the changes in the daily cycle and reflect the rhythm in the activity of the nervous system and of the endocrine glands. When a person is awake, his basal metabolism increases, his heart beats at a more rapid rate and his respiratory rate is higher, his body temperature is higher, and his endocrine glands are very active. During sleep, the body temperature becomes lower, the heartbeat and respiration rate is reduced, and the activity of the endocrine glands slows down. The

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organism rests and restores its energy.

The higher vegetative centers located in the brain play the main role in regulating the physiological rhythm. They transmit to the biological clock in the organism the effect of the light-darkness rhythm. Day and night are a special kind of stimulus for work or rest. They, as it were, mark the time of activity and of sleep, and are therefore called timers.

Light affects the nerve centers and activates them; it intensifies the flow of neurohormones into the blood, with the result that the activity of the endocrine glands increases, especially that of the hypophysics and the adrenals, which play the main role in intensifying many physiological functions and increase the resistance of the organism to external influences. In this manner, the adrenal glands secrete their hormones more actively in the morning and during the first half of the day; later the amount of these hormones in the blood gradually decreases and becomes especially small by 0100 to 0400-0500 hours. By the moment of awakening, the concentration of hormones in the blood again increases rapidly, and this enables the

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organism to activate its vital activity: the tone of the brain increases, its reflex activity increases, the functioning of the endocrine glands becomes more intense, the influence of the sympathetic nervous system on the organism increases, and the nerve centers located within the brain and actively influencing the cortex receive an increased supply of energy.

In this manner, the daily rhythm of physiological processes increases the potential capabilities of the organism during this time, especially its psychophysiological functions and its work ability.

The organism's sensitivity and resistance to external influences is closely related to the physiological rhythm. For instance, a well-defined daily rhythm was discovered in the variation of the organism's sensitivity and resistance to the effect of oxygen deficiency, heat, cold, toxic substances, and ionizing radiation.

When the organism is affected by extreme external factors, it correspondingly responds in any phase of the daily rhythm. However, during the period

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of wakefulness, the reaction is much better, due to the greater potential (reserve) capabilities of the organism. It is known, for instance, that for an animal the same dose of poison can be lethal or not, depending on the time of day at which it is administered.

Biologists and physicians attribute a great deal of importance in solving many problems to the rhythm of biological functions and to the corresponding resistance of the organism. For instance, surgeons know that patients tolerate serious operations better in the morning or during the day, and that the postoperative mortality rate is highest at night when a relative hypophysial and adrenal insufficiency can be observed.

The daily rhythm of physiological functions is stable. It is also present in a person who has been kept in bed for a long time. A temporary change in the rhythm of sleep does not affect the nature of the shifts in hormone concentration in the blood.

When a person is subjected to a rapid change in time zones on the earth (for instance, a flight on a fast plane from one point on the globe to

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another with a difference of 7-10 hours or more), he has to adjust in a short period to a new rhythm of life: he has to sleep during the hours when he usually works, and vice versa, that is, he must live under conditions when the cycle of the timers and the rhythm of pshysiological functions is desynchronized. In many people, especially those with weak constitutions, such a shift in the biorhythm is accompanied by their getting tired quickly, experiencing headaches, weakness, sleeping poorly, and so on.

Knowledge of the biorhythm is of great importance for flight personnel and, especially command personnel of units and flight schools. It is precisely in aviation that the necessity for changing the schedule of daily activity (for instance, night flights) most frequently arises. In correspondence with the daily rhythm of physiological functions, working ability also changes. It is greatest in the morning and in the daytime; then it gradually lessens and reaches an extreme minimum about 0200-0500 hours, after which it sharply rises. In making up the schedules for the

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day, it is necessary to take into account this peculiarity of man's physiological functions by planning complicated tasks for the daytime, and preferably, for the first half of the day. When planning night flights, it is necessary to provide for a period of 4-5 hours sleep during the day, for the most intense regeneration of the organism's forces takes place precisely during sleep.

The commander and the air force physician must study the adaptive reactions of the organism and the state of tension and fatigue, and know the extent of endurance of each flyer and take this into account in flight work.

If they have thorough knowledge of the rhythm of physiological functions, they can work out the most rational schedule for work and recreation and can maintain high work ability of the flight personnel.

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1/2 034 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--COMPLEXES FOR THE SURFACE TREATMENT OF FLUOROPLAST 4 -U-

AUTHOR-(02)-BELEGA, ZH.V., KONTAR, A.A.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 61-2

DATE PUBLISHED--------70

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CONTROL MARKING--NO RESTRICTIONS

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CIRC ACCESSION NO--AP0119500

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0119500
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPLEX WAS PREPD. (FROM 200 G NA, AND 375 G ANTHRACENE DISSOLVED IN 1000 ML TETRAHYDROFURAN) FOR THE MODIFICATION OF FLUOROPLAST-4 (I) SURFACES. I TREATED WITH THE COMPLEX HAD A SURFACE ACTIVE FILM, WHICH MADE I MORE SUITABLE FOR COATING WITH METALS AND GAVE IT SUPERIOR ADHESIVE AND MECH. STRENGTHS.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--THE TECTO THALAMO TELENCEPHALIC SYSTEM OF THE TURTLE ELECTROPHYSIOLOGICAL STUDY -U-

AUTHOR-(02)-BELEKHOVA, M.G., AKULINA, M.M.

COUNTRY OF INFO--USSR

B

SOURCE--NEYROFIZIOLOGIYA, 1970, VOL 2, NR 3, PP 296-306

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TURTLE, CENTRAL NERVOUS SYSTEM, ELECTROPHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0350 STEP NO--UR/0660/70/002/003/0296/0306

CIRC ACCESSION NO--AP0132584

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132584

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION OF EVOKED POTENTIALS AND NEURONAL RESPONSES (292 CELLS) TO ELECTRIC STIMULATION OF THE OPTIC TECTUM AND TO LIGHT FLASHES WERE STUDIED IN TURTLES IMMOBILIZED BY DIPLACIN WITH ADDITION OF CHLORALOSE OR UNCER CHLORALOSE NEMBUTAL ANESTHESIA. MOST THALAMIC CELLS RESPONDING TO THESE STIMULI WERE CONCENTRATED WITHIN N. ROTUNDUS AND ADJOINING TO IT TR. TECTO THALAMICUS; FOREBRAIN CELLS WITHIN GENERAL CORTEX, PALLIAI THICKENING AND NEOSTRIATUM. MORE SHORT RESPONSES PREDOMINATED IN TWO LATTER STRUCTURES AS COMPARED TO GENERAL CORTEX. VISUAL AND TECTAL NEURONAL RESPONSES, ESPECIALLY OF THE SAME CONVERGENT CELLS, SHOWED SOME CORRELATION IN LATENCY AND RESPONSE TYPE, MORE PRONOUNCED IN N. ROTUNDUS. SUBMAXIMAL TETANIZATION OF THE OPTIC TECTUM PRODUCED FACILITATORY INFLUENCE ON VISUAL CORTICAL RESPONSES AND ON THOSE EVOKED BY STIMULATING N. ROTUNDUS. HIGH FREQUENCY STIMULATION OF N. ROTUNDUS INDUCED PARTIAL BLOCKING IN THE TECTAL CONDUCTION TO THE FOREBRAIN. THE TOTAL IRREVERSIBLE BLOCK OF THE CONDUCTION APPEARED DUE TO DESTRUCTION IN THE PART OF TR. TECTO THALAMICUS, BOARDERING THE LATERAL BUNDLE OF THE FOREBRAIN, LATERAL GENICULATE BODY AND N. ROTUNDUS. A CONCLUSION IS MADE THAT VARIOUS CONDUCTION PATHWAYS FOR THE TECTAL IMPULSATION TO THE FOREBRAIN MAY EXIST. FACILITY: THE I. M. SECHENOV INSTITUTE OF EVOLUTIONARY PHYSIOLOGY AND BIOCHEMISTRY, ACADEMY OF SCIENCES, USSR, LENINGRAD.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--MENTAL OVERLOADING AND ITS RELATION TO PERPLEXITY -U-

AUTHOR--BELENKAYA, N.YA.

COUNTRY OF INFO--USSR

B

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 5, PP 727-731

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--PSYCHOSIS, HALLUCINATION, PSYCHOLOGIC STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1136 STEP NO--UR/0246/70/070/005/0727/0731

CIRC ACCESSION NO--AP0115155

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200320008-4"

2/2 015 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0115155

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MENTAL OVERLOADING AS WELL AS PERPLEXITY OCCURS IN THE PROCESS OF ACUTE PSYCHOSES. MENTAL OVERLOADING OCCURS DIRECTLY FOLLOWING ALLEVIATION OR A DISAPPEARANCE OF PREPLEXITY, CHANGING THE AFFECT OF PUZZLEMENT OS CHARACTERISTIC OF PERPLEXITY AND CAN BE QUALIFIED AS AN ACTIVE MENTAL PROCESS IN THE FORM OF PREOCCUPATION AND CONCENTRATION ON UNUSUAL MORBID EXPERIENCES. DESPITE A MIXIMUM INTROVERSY THE PATIENTS IN SUCH CASES DO NOT LOSE A PERCEPTION OF THE EXTERNAL WORK. THIS IS THE MAIN DIFFERENCE BETWEEN MENTAL OVERLOADING AND THE STATE OF CHANGED CONSCIOUSNESS. MENTAL OVERLOADING AS IS PERPLEXITY MAY BE DEPICTED THROUGH THE PROPERTIES OF DIFFERENT SYNDROMES. THE AUTHOR DISUCSSES THE CLINICAL FEATURES OF MENTAL OVERLOADING IN DEPRESSIONS, ACUTE HALLUCIONOSIS, ACUTE DELUSIONAL SYNDROMES, ONEIROID STATES, ETC. FACILITY: KAFEDRA PSIKHIATRII TSENTRAL'NOGO INST. USOVERSHENSTVOVANIYA VRACHEY, MOSCOW.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--POLAROGRAPHIC BEHAVIOR OF AZORIBITYLAMINE -U-

AUTHOR-(02)-TIKHOMIROVA, G.P., BELENKAVA, S.L.

B

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(5), 472-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AZO COMPOUND, AMINE, DROPPING MERCURY ELECTRODE, POLAROGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605019/B12 STEP NO--UR/0073/70/036/005/0472/0474

CIRC ACCESSION NO--AP0140911

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0140911
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2,4,5,(HICHOH) SUB4 CH SUB2 NH)ME SUB2 C SUB6 H SUB2 N SUB2 PH IS REDUCED AT A DROPPING HG ELECTRODE IN A DIFFUSION CONTROLLED 2-ELECTRON PROCESS, PROBABLY TO A DIPHENYLHYDRAZINE. IN ACETATE AND BRITTON-ROBINSON BUFFERS, THE HEIGHT OF THE POLAROGRAPHIC WAVE INCREASES AND SHIFTS TO LESS NEG. POTENTIALS WITH DECREASE IN PH. IT IS POSSIBLE TO DET. AZORIBITYLAMINE IN THESE BUFFERS AT ABOUT PH 3-5. FACILITY: UKR. NAUCH.-ISSLED. INST. PISHCH. PROM., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 547.436

KOSTYUKOVSKIY, Ya. L., BRUK, Yu. A., PAVLOVA, L. V., SLAVACHEVSKAYA, N. M., KOKUSHKINA, A. V., MIRKIN, B. S., BELEN'KAYA, I. A.

"Alkanethiols and Their Derivatives. I. Acid-Base Properties of N-Substituted β-Aminoalkanethiols"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 662-665

Abstract: The acid-base properties of a number of N-substituted β-aminoalkanethiols and some related compounds are studied under standard conditions to evaluate the effect of structural singularities of thiol on the acidity of the SH-group, and hence on sulfhydryl reactivity. The results of the studies show that increased acidity of the SH group is determined chiefly by the capacity of the given compounds to form a zwitter-ion structure, and to a lesser degree by the nature of the alkyl substituents associated with the nitrogen atom. The effect of alkyl substituents on the basicity of the amino group is not so clearly expressed as a consequence of other factors connected with the inductive effect.

1/2 017 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--CLINICAL ASSESSMENT OF SOME MEANS OF DIAGNOSING THE DISORDERS OF THE ABSORBTIVE FUNCTION OF THE INTESTINE -U-

AUTHOR-(02)-FROLKIS, A.V., BELENKAYA, T.YU.

COUNTRY OF INFO--USSR

SOURCE--TERAPECTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 36-40

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SMALL INTESTINE, DIGESTIVE DISEASE, ABSORPTION, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0811 STEP NO--UR/0504/70/042/003/0036/0040

CIRC ACCESSION NO--AP0102773

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200320008-4"

2/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102773

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORBTIVE FUNCTION OF THE SMALL INTESTINE WAS STUDIED IN 82 PATIENTS WITH CHRONIC ENTEROCOLITIS. THE AUTHORS USED THE METHOD AFTER VAN DE VAMER, THE RADIOISOTOPE METHOD, TEST TO LIPIODOL ABSORBTION, TEST WITH D,XYLOSE LOAD, GLUCOSE TEST, AND THE IODINE POTASSIUM TEST. THE PERORAL VARIANT OF THE IODINE POTASSIUM TEST IS RECOMMENDED AS A TENTITIVE TEST FOR INVESTIGATING THE ABSORBTIVE FUNCTION OF THE INTESTING. TO STUDY LIPIDS ABSORBTION THE CHEMICAL METHOD AFTER VAN DE VAMER AND THE METHOD OF RADIOINDICATION WITH THE AID OF LABELLED LIPIDS ARE THE MOST RELIABLE ONES. THE LIPIODOL TEST PROVED TO BE USELESS TO REVEAL DISORDERS OF INTESTINAL ABSORBTION IN PATIENTS WITH CHRONIC ENTEROCOLITIS. THE D,XYLOSE TEST IS A SUFFICIENTLY PRECISE TECHNIQUE OF INVESTIGATION OF CARBOHYDRATE ABSORBTION. THE GLUCOSE TEST CANNOT BE REGARDED AS A SPECIFIC REACTION FOR INVESTIGATING INTESTINAL ABSORBTION. THERE IS A CORRELATION BETWEEN THE CLINICAL SIGNS OF THE INTESTINAL DISEASE AND INDICES OF THE ABSORBTION TESTS.

UNCLASSIFIED

USSR

UDC 621.791.753.042.93.01.024.2:669.245

KAZAKOV, YU. V., Engineer, TOSHCHEV, A. M., Engineer, BELEN'KIY, A. M., Candidate of Technical Sciences, KRECHETOV, A. D., Engineer, and SAMOKHVALOV, O. A., Engineer

"Structure and Properties of Joints Obtained by Pulse Arc Welding of Thin-Walled Nickel Alloy Parts"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 71, pp 35-36

Abstract: Results are presented of comparative studies of the structure and properties of welded joints obtained in welding EP199 alloy and Ep222 steel 1 to 2 mm thick by a continuous and pulsed arc in an argon atmosphere with a nonconsumable electrode. It is shown that pulsed arc welding makes it possible to improve weld formation and the mechanical properties of welded joints of EP199 alloy and EP222 steel.

1/1

USSR UDC: 621.791.75:669.715

KAZAKOV, Yu. V., KRECHETOV, A. D., Kuybyshev, BELEN'KIY, A. M., and TOSHCHEV, A. M., Kazan'

"Characteristics of Arc Welding Aluminum Alloy Parts Differing in Gage"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 70, pp 51-53

Abstract: The conditions for shaping welds of aluminum alloys of difference gages are much more complex than those for steel. The intensive heat transfer to the mass of a heavy aluminum part requires a considerable increase in linear welding energy. The shielding action of the gap markedly weakens the heat transfer from the edge of the thin part. Quality joints of parts of different gages may be produced by either limiting or completely eliminating the direct action of the arc on the thin edge. The simplest joint meeting this condition is an edge joint. A new technology of welding is described using a shielding shoulder to produce a lap joint. It is based on a shoulder made on the heavy-gage part, with the height of the shoulder greater than the length of the arc. The shoulder protects the thin edge from the direct action of the arc. The thin edge is fused by

USSR

KAZAKOV, Yu. V., et al, Avtomaticheskaya Svarka, No11, Nov 70, pp 51-53

the heat given off by the molten metal of the shoulder. Various types of shielding shoulders are described.

Biological Rhythms

USSR

BELEN'KIY, B.

"Rhythms of Life"

Kishinev, Sovetskaya Moldaviya, 8 Dec 73, p 4

Abstract: A discussion of the physiological role of circadian rhythms and biological clocks in living organisms, including man, is followed by a brief description of an electronic device called the LIDA developed by Moldavian scientists, engineers, and physicians. By subjecting individuals to pulsed visual, tactile, and auditory sensations, the LIDA can help to regularize natural bodily rhythms that have become disturbed by functional or somatic pathologies. The LIDA has been found efficacious in the treatment of some cardiac and neurological arrhythmias, gallbladder dyskinesia, bronchial asthma, hypertension, and insomnia.

1/1

ELECTRONICS

Amplifiers

USSR

IOSIFOVICH, BELEN'KIY BORIS, and BORISOVICH, MINTS MARK

"Highly Sensitive Direct Current Amplifiers with Converters" (Vysokochuvstvitel'nyye Usiliteli Postoyannogo Toka S Preobrazovatelyami), Leningrad, Izd-vo "Energiya," 1970, 8,000 copies, 384 pages

Abstract: The book is devoted to the design and application of highly sensitive direct current amplifiers (UPT) with input signal conversion. Galvanometric converters and converters of small direct current signals to variable voltage (modulators) are examined in detail. Special attention is given to the methods of engineering calculations of amplifiers and to the protection of amplifiers from interference. Circuits and the characteristics of highly sensitive UPT with converters manufactured by industry are presented, as well as, a comprehensive bibliography.

The book is intended for specialists working in the development and application of measuring and automatic equipment intended for amplification, measurement, and registration of small fixed and slowly changing signals, and may be useful to students of higher institutes of learning.

The book contains numerous formulas, figures, and 986 citations in the bibliography.

USSR

IOSIFOVICH, B. B., and BORISOVICH, M. M., "Highly Sensitive Direct Current Amplifiers with Converters" (Vysokochuvstvitel'nyye Usiliteli Postoyannogo Toka S Preobrazovatelyami), Leningrad, Izd-vo "Energiya," 1970, 8,000 copies, 384 pages

The chapter headings are as follows:

2/2

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--PYROLYSIS GAS CHROMATOGRAPHY OF COPOLYMERS OF STYRENE WITH METHYL METHACRYLATE -U-

AUTHOR--TURKOVA, L.D., BELENKIY, B.G.

B

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER A 1970, 12(2), 467-73

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYROLYSIS, GAS CHROMATOGRAPHY, STYRENE, METHYL METHACRYLATE, COPOLYMER, CHEMICAL LABORATORY APPARATUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0243 STEP NO--UR/0459/70/012/002/0467/0473

CIRC ACCESSION NO--AP0106899

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPN. WAS DETD. OF STYRENE, ME METHACRYLATE COPOLYMERS AND THE CORRESPONDING HOMOPOLYMER MIXTS. BY PYROLYSIS OF THE COPOLYMER AT 500DEGREES AND ANAL. OF THE RESULTING GASES BY GAS CHROMATOG. (1 M LONG COLUMN, 4 MM IN DIAM., FILLED WITH CELITE 545 CONTG. 15PERCENT DINONYL PHTHALATE, TEMP. 70DEGREES, HE GAS CARRIER FLOW 72 ML-MIN). THE PYROLYSIS CELL IS SHOWN IN A DIAGRAM; IT IS ATTACHED DIRECTLY TO THE GAS CHROMATOGRAPH. THE ANAL. TAKES 10-15 MIN AND THE RELATIVE DETN. ERROR IS SMALLER THAN OR EQUAL TO 2PERCENT.

UNCLASSIFIED

USSR UDC: 621.396.69:621.319.4

BELEN'KIY, B. P., US'YAROV, O. G.

"Designing Fuses for Pulse Capacitors"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 2 (19), pp 39-50 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V288)

Translation: The paper presents the results of studies of fast-acting copper wire fuses designed for internal protection of pulse capacitors. A method is proposed for evaluating the speed of the fuses. Authors' abstract.

1/1

Steels

USSR

UDC 669-15:621.789

BELEN'KIY, B. Z., FARBER, V. M., and GOL'DSHTEYN, M. I., Ural Polytechnic Institute

"Investigation of the Fine Structure of Steel After Deformation in the Course of Perlite Transformation"

Moscow, Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 109-113

Abstract: In this article the authors have investigated the structure and properties of 10GN steel after thermomechanical treatment in the course of diffusion decay at the perlite stage. Electron microscropic investigation showed that the microstructure of steel to a significant degree is established by the temperature of plastic deformation. The level of the mechanical properties after various treatments is associated with the formation of a substructure in the ferrite and a modification in the morphology of the perlite.

USSR

BELEN'KIY, B. Z., et al., Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 109-113

Figure 1 is a photograph of the structure of the 10GN steel and Figure 2 is a photograph of the structure of the steel at various temperatures for the substructure and the perlite.

The article contains 2 figures and 11 bibliographic references.

2/2

USSR

UDC 542.91:547.242+546.16

KOPAYEVICH, YU. L., BELEN'KIY, G. G., GERMAN, L. S., and KNUNYANTS, I. L., Institute of Organoelemental Compounds, Academy of Sciences USSR

"Fluoroalkylarsenic Derivatives"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971, pp 1124-1125

Abstract: Tertiary polyfluoroalkylarsines were synthesized by addition of AsF_3 (I) to certain fluoro-derivatives of ethylene in the presence of SbF_5 (II). Thus, the reaction of (I) with $CH_4=CF_2$ at 100-120° under pressure for 6 hours, in the presence of traces of (II) yielded the following: $(CH_3CH_2)_3As$, 42% yield, b.p. 146-147°. The reaction of (I) with $CF_2=CFH$ requires 0.3 moles of (II) and is easily executed under pressure at 20°. This produced $(CF_3CFH)_3As$ in 74% yield and b.p. 114-115°. By the reaction of (I) with $CF_2=CF_2$ in the presence of 0.3 moles (II) under pressure at 20°, the following products were obtained: 1) $(C_2F_5)_3As$, b.p. 87-88°, yield 39%; 2) $(CF_3CF_2)_2AsF$, yield 30%, b.p. 67-68°. The structure of these compounds were confirmed by nuclear magnetic resonance and mass-spectroscopic data.

1/1

USSR

UDC 010.49

ABDULLAYEV, G. B., ANTONOV, V. B., BELEN'KIY, G. L., GUSEYNOV, D. T., NANI, R. KH., and SALAYEV, E. YU., Institute of Physics, Academy of Sciences Azerbaydzhan SSR

"Photoconductivity of $CdIn_2S_4$ Single Crystals, Recombination Scheme"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 4, 1971, pp 127-131

Abstract: A study of the photoelectric properties of $CdIn_2S_4$ single crystals under intrinsic excitation, thermostimulated conductivity, as well as the radiation spectrum of crystals under the action of fast electrons, enabled the authors to obtain information on the energy level spacing in the forbidden band of $CdIn_2S_4$ and to determine some recombination and trapping center parameters.

1/1

Crystals & Semiconductors

UDC 539.293:535.374:546.681'191.1

USSR

BELEN'KIY, G. L., KROLEVETS, N. M., LASHKAREV, V. YE., and SHEYNKMAN, M. K., Institute of Semiconductors, Academy of Sciences Ukrainian SSR, Kiev; Institute of Physics, Academy of Sciences Azerbaydzhan SSR, Baku

"Radiative Electron Capture by Sensitivity Centers in High-Pre sistivity GaAs"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 1, Jan 71, pp 128-132

Abstract: In order to elucidate the mechanism of electron capture by r-centers, the authors studied the stationary dependence of the photocurrent and luminous intensity on temperature and excitation intensity (at various temperatures) as well as optical infrared quenching of photocurrent and luminescence. High-resistivity Cu-doped ($\sim 10^{-3}$ percent Cu) GaAs single crystals were studied. The photoluminescence spectra of typical specimens display two luminescence bands $h\nu_m$ = 0.99 ev (band 1)

1/3

USSR

BELEN'KIY, G. L., et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 1, Jan 71, pp 128-132

and $h\nu_m$ = 1.23 ev (band 2), which undergo thermal quenching due to thermal excitation of holes from the r-centers into the v-band and their subsequent capture by s-centers of fast recombination. It is shown that band 1 is due to radiative capture of electrons by the centers of slowest recombination of the majority carriers (r-centers). In the GaAs : Cu forbidden gap, and situated closer to the v-band than the r-centers are recombination m-centers $E_{vm} \approx$ 0.3 ev, which take part in the recombination at $T \leq 120^{\circ}$ K. It is shown that band 2 is due to electron capture by these centers.

In order to determine whether the r-centers are due to the Cu atoms present in the crystals, the intensity of the luminescence $h\nu_m$ = 1.04 ev observed in n-type GaAs specimens undoped

USSR

BELEN'KIY, G. L., et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 1, Jan 71, pp 128-132

with Cu atoms whose Cu content, according to chemical analysis data, did not exceed $5 \cdot 10^{-6}$ percent (electron concentration n = $1 \cdot 10^{15}$ - $1 \cdot 10^{16}$ cu m and mobility μ_n = $3 \cdot 10^{-3}$ - $5.5 \cdot 10^{-3}$ sq cm/v·sec in different crystals) was compared with the intensity of band 1 in the Cu-doped crystals. It was found that the luminescence band intensities of 1.04 and 0.99 ev in both types of crystals differed by a factor of three at most and the variation with temperature of the intensities of both bands and the variations of their intensities with excitation intensity were similar. This indicates that the luminescence centers responsible for the band $h\nu_m$ = 1.04 ev are not directly related to copper atoms.

The authors thank A. V. LYUBCHENKO, Candidate of Physico-mathematical Sciences, for discussing the results.

3/3

1/2 049 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ON SENSITIZING RECOMBINATION CENTRES IN GASE SINGLE CRYSTALS -U-

AUTHOR-(04)-ABDULLAYEV, G.B., ALIYEVA, M.KH., BELENKIY, G.L., MAMEDOVA, A.Z.

B

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 37, NR 2, PP 571-576

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ELECTRON STRUCTURE, CRYSTAL LATTICE STRUCTURE, TIN, METAL COATING, SINGLE CRYSTAL, OPTIC PROPERTY, REACTION KINETICS, GALLIUM SELENIDE, PHOTOCONDUCTIVITY, RECOMBUSTION REACTION, CAPTURE CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0629 STEP NO--GE/0030/70/037/002/0571/0576

CIRC ACCESSION NO--AP0107226

UNCLASSIFIED

2/2 049 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0107226

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INVESTIGATION IS MADE OF THE STATIONARY PHOTOCONDUCTIVITY AND ITS KINETIC, THE THERMALLY STIMULATED CONDUCTIVITY, AND THE MOBILITY OF CURRENT CARRIERS OF TIN DOPED P GASE SINGLE CRYSTALS. IT IS SHOWN EXPERIMENTALLY THAT THE RECOMBINATION IN SUCH CRYSTALS IS CONTROLLED BY TWO TYPES OF RECOMBINATION CENTRES: ONE OF THEM BEING "SLOW" (R), ANOTHER "FAST" (S). THE PRINCIPAL PARAMETERS OF "SLOW" RECOMBINATION CENTRES (R), THERMAL (E PRIMET SUBCR EQUALS 0.58 EV) AND OPTICAL (E PRIMEO SUBCR EQUALS 0.78 EV) ENERGETIC DEPTH FROM C BAND, ELECTRCN (S SUBNR EQUALS 5 TIMES 10 PRIME NEGATIVE14 CM PRIME2) AND HOLE (S SUBPR EQUALS 3 TIMES 10 PRIME NEGATIVE20 CM PRIME2) CAPTURE CROSS SECTIONS, ARE MEASURED. THE CONCENTRATION IS FOUND TO BE EQUAL TO N SUBR EQUALS 3 TIMES 10 PRIME14 CM PRIME NEGATIVE3. IT IS SHOWN THAT THE R CENTRE IS A SINGLE CHARGED DONOR WHICH MAY BE DUE TO SUBSTITUTING GA ATOMS BY SN ATOMS IN THE GASE LATTICE.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200320008-4"

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXPERIENCE IN OPERATING INTRAOCULAR TENSION INDICATOR -U-

AUTHOR-(02)-BELENKIY, K.R., KIYKO, YU.I.

B

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 3, PP 37-38

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, EYE DISEASE, HYPERTENSION, MEDICAL EXAMINATION, HEMODYNAMICS, MEDICAL EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0115 STEP NO--UR/0357/70/000/003/0037/0038

CIRC ACCESSION NO--AP0129371

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129371

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS MADE A COMPARATIVE ASSESSMENT OF MAKLAKOV'S TONOMETER AND INTRAOCULAR TENSION INDICATOR READINGS IN 112 EYES OF 86 PERSONS WITH SUBCOMPENSATED GLAUCOMA. THE CONTROL GROUP INCLUDED 39 SUBJECTS (78 EYES) IN WHOM GLAUCOMA WAS RULED OUT THROUGH EXAMINATION IN A NIGHT HOSPITAL. THE AUTHORS HAVE COME TO A CONCLUSION THAT IN MASS EXAMINATIONS FOR GLAUCOMA THE INDICATOR SHOULD BE EMPLOYED IN INSTITUTING ORTHOCLINOSTATIC TEST AFTER M. M. KRASNOV. IN ADDITION TO TONOMETRY AFTER MAKLAKOV ONE OF HEMODYNAMIC TESTS HAS TO BE EFFECTED TO IMPROVE THE QUALITY OF PRIMARY EXAMINATIONS FOR GLAUCOMA.

FACILITY: UFIMSKIY NAUCHNO ISSLED. INSTITUT GLAZNYKH BOLEZNEY.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF BULK DYEING ON THE PROPERTIES OF A KAPRON FIBER -U-

AUTHOR-(03)-PEKARSKIY, M.SH., PAKSHVER, A.B., BELENKIY, L.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (2), 74-6

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SUBJECT AREAS--MATERIALS

TOPIC TAGS--DYE, CAPRONE, PIGMENT, TENSILE STRENGTH, FATIGUE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0103 STEP NO--UR/0183/70/000/002/0074/0076

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CIRC ACCESSION NO--AP0132396

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF PIGMENTS (SUCH AS MINERAL PINK, MINERAL YELLOW, PHTHALOCYANINE BLUE, NYLOPHIL BLUE BL, AND CHANNEL BLACK) AND KAPROSOLS (E.G., BROWN 4K, RED K, AND SCARLET S) ON THE PROPERTIES OF KAPRON (I) FIBERS WERE STUDIED. THE DYES AFFECTED THE TENSILE STRENGTH, FATIGUE STRENGTH, AND PHOTOSTABILITY OF I FIBERS.

UNCLASSIFIED

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TITLE--MEASUREMENT OF SMALL COLOR DIFFERENCES IN DYED TEXTILE MATERIALS -U-

AUTHOR-(03)-SHESTERNINA, G.P., BELENKIY, L.I., RYMOV, A.I.

COUNTRY OF INFO--USSR

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SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--DYE, TEXTILE, TEST METHOD

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